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MEMORANDUM TO THE FILES

FROM:

SUBJECT: RS-13 Field Tests - 11 July to 15 July 1955

1. On 12 July 1955 of OC-O&T drove to Receiving site near to observe the RS-13 base station equipment in operation.

2. At two types of receiving facilities were being used. The first consisted of the RHR-13 adapter unit with oscilloscope and two tape recorders. The RHR-13 operates with either an SP600 or 51J (255 or 500 kc IF) and converts the video output of the receiver to 10 kilocycles which is then passed through a very selective filter and on to the vertical plates of the oscilloscope. The tape recorders are used for recording the original 10 kilocycle transmission and subsequent speed reduction to aural copy levels. In the course of this speed reduction (16 to 1) the 10 kilocycle tone is also reduced by the same factor.

The second method used to receive the RS-13 transmissions consisted of an AN/URA-8A with an RAPC undulator recording the incoming signals on inked tape directly after demodulation.

There is still some question as to which method is best, particularly when used by qualified operators, however the RHR-13 does have a slight advantage in scope presentation in that it is possible to identify the signal more readily when tuning.

3. The propagation curves for the two field sites chosen reflected very poor conditions and they were borne out during the tests. The morning attempt from St. Louis was very poor with the (RS-13) signal audible but not copyable. The RS-6 auxiliary circuit faded out and only the higher power used by the base station on this circuit enabled communications to continue. After lunch, conditions took a turn for the better and the field signal suddenly became strong on 12 mcs., and two transmissions were received by the base station. At this point the two Operations representatives had to return to Washington and were unable to observe the remainder of the field tests. A telephone conversation with of the R&D Laboratory confirmed the fact that several good transmissions were received by the base during the remainder of the afternoon and conditions were considered good enough to have the field team continue to Denver, Colorado. At Denver conditions were very poor and no satisfactory contacts were made on either circuit. The field team returned to Washington on the 15th of July and a report by OC-E will be forthcoming.

CC: ✓ OC-E/R&D
OC-O&T/SB/CT

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